

Table of Contents

1.0	Welcome	1
2.0	Faculty and Staff	1
3.0	Majors and Minors	2
3.1	Majors	2
3.2	Minors.....	3
4.0	Department Mission, Objectives, and Outcomes	3
4.1	The Mission of the Mechanical and Manufacturing Engineering Department.....	3
4.2	Program-Educational Outcomes	4
4.21	Broader Desired Outcomes	4
4.22	Discipline-Oriented Outcomes.....	5
4.3	Program Educational Objectives.....	6
5.0	Academic Advising.....	6
5.1	Academic Advisors	8
5.2	The Miami Plan for Liberal Education	9
5.3	Degree Audit Report System (DARS).....	9
5.4	Independent Study	10
5.5	Petition Process.....	10
5.6	Proficiency Exams	10
5.7	Pre-requisites and Co-requisites	11
5.8	Registration Information.....	12
5.9	Change of Schedule	12
5.10	Credit/No Credit Classes.....	12
5.11	Final Grade Reports	12
5.12	Force Add Procedures.....	13
5.13	Technical Electives	14
5.14	Departmental Honors	14
5.15	Fundamentals of Engineering Exam.....	15
5.151	About the FE Exam.....	15
5.152	Why Become Registered.....	15
5.153	The registration process	16
5.154	Procedures to apply for the FE Exam	16
5.16	Professional Practice in the Program	17
6.0	Miscellaneous Department Information and Opportunities.....	20
6.1	Using Department or Grant Funds to purchase items for project use.....	20
6.2	MME Laboratory Safety Procedures	21
6.3	Employment in the MME Department	23
7.0	Opportunities and Programs of Interest.....	23
	Honors and Scholars Program	23
	Scholastic Enhancement Program.....	23
	Luxembourg (Dolibois European Center)	23

Study Abroad	24
Service Learning and Civic Leadership.....	24
Living Learning Communities	24
Disability Resources	24
Learning Disabilities Services	24
ROTC.....	24
Employment on Campus.....	24
8.0 National Information.....	24
8.1 ABET (Accreditation Board for Engineering and Technology) Accreditation	24
8.2 National Society of Professional Engineers (NSPE) Code of Ethics for Engineers...	25
8.21 Fundamental Canons.....	26
9.0 Student Organizations.....	26
9.1 Engineering Honor Society.....	26
9.2 Engineering Students Abroad	26
9.3 Student Advisory Council.....	26
9.4 Society of Automotive Engineers (SAE).....	27
9.5 Society of Manufacturing Engineers (SME).....	27
9.6 Society of Women Engineers (SWE)	27
9.7 National Society of Professional Engineers (NSPE)	27
9.8 American Society of Mechanical Engineers (ASME).....	28
10.0 Advisory Council.....	28
Appendix A: Manufacturing Engineering Curriculum Requirements, Sample Four Year Program, Course Descriptions, and Flow Chart	A-1
Appendix B: Mechanical Engineering Curriculum Requirements, Sample Four Year Program, Course Descriptions, and Flow Chart	B-1
Appendix C: Engineering Management with a Manufacturing Engineering Technical Specialty Curriculum Requirements, Sample Four Year Program, Course Descriptions, and Flow Chart	C-1
Appendix D: Sample Curriculum for Double Major in Manufacturing & Mechanical Engineering.....	D-1
Appendix E: Sample Curriculum for Double Major in Manufacturing Engineering and Engineering Management with a Manufacturing Engineering specialty.....	E-1
Appendix F: Manufacturing Engineering Minor	F-1
Appendix G: Mechanical Engineering Minor	G-1
Appendix H: Departmental Honors	H-1
Appendix I: Co-Op / Intern Forms.....	I-1
Appendix J: After Hours Lab Use Authorization.....	J-1

Department of Mechanical and Manufacturing Engineering Student Handbook

1.0 Welcome to the Department of Mechanical and Manufacturing Engineering!

Majors offered by the department include

- Manufacturing Engineering (MFG)
- Mechanical Engineering (MCH)
- Engineering Management with a technical specialty in Manufacturing Engineering (EGM)

Minors offered by the department include

- Manufacturing Engineering
- Mechanical Engineering

We are so glad you have elected to be a part of our program. We are here to assist you throughout your college career and look forward to the opportunity of working with you. Below you will find a list of our faculty and staff and their contact information. Please feel free to contact us as the need arises. Good luck to you in your time here at Miami and WELCOME to Miami University and to the Department of Mechanical and Manufacturing Engineering!

2.0 Faculty and Staff of the Department and their contact information

Osama M. Ettouney, Ph.D., Minnesota, Department Chair, ettounom@muohio.edu; 529-0712, 56G EGB

Errol A. Gundler, MBA, Miami University, Assistant Chair, gundleea@muohio.edu; 529-0713; 56F EGB

Pam Messer, Administrative Assistant, messerpm@muohio.edu; 529-0711; 56H EGB

Michael Bailey-Van Kuren, Ph.D., Georgia Institute of Technology, Associate Professor, baileym@muohio.edu; 529-0725; 56K EGB

Anna Dollár, Ph.D., Krakow University of Technology, Associate Professor, dollara@muohio.edu; 529-0714; 56E EGB

B. Carter Hamilton, Ph.D., Georgia Institute of Technology, Assistant Professor, hamiltbc@muohio.edu; 529-0722; 56N EGB

Fazeel Khan, Ph.D., Rensselaer Polytechnic Institute, Assistant Professor, khanfj@muohio.edu; 529-0719; 56R EGB

Jeong-Hoi Koo, Ph.D., Virginia Tech, Assistant Professor, koo@muohio.edu; 529-0723; 56M EGB

James Moller, Ph.D., Rensselaer Polytechnic Institute, Associate Professor, mollerjc@muohio.edu; 529-0725; 56K EGB

Christine Noble, Ph.D., Cincinnati, Associate Dean, noblemc@muohio.edu; 529-4036; 202A Bonham House

George Rasmussen, MBA, Vanderbilt University, Visiting Professor, rasmusga@muohio.edu; 529-0716; 56B EGB

Karl Reiff, B.S., Miami University, Lab Technician and Coordinator, reiffkr@muohio.edu; 529-0726; 52D EGB

Robert Setlock, A.B.D, Ohio University, Instructor, setlocrj@muohio.edu; 529-0720; 56Q EGB

Amit Shukla, Ph.D., University of Cincinnati, Assistant Professor, shuklaa@muohio.edu; 529-0721; 56P EGB

Kumar Singh, Ph.D., Louisiana State University, Assistant Professor, singhkv@muohio.edu; 529-0724; 56L EGB

Andrew Sommers, Ph.D., University of Illinois, Assistant Professor, sommerad@muohio.edu; 529-0718; 56S EGB

James Van Kuren, Ph.D., Ohio State University, Visiting Professor, vankurjt@muohio.edu; 529-0716; 56B EGB

3.0 Majors and Minors

3.1 Majors

The Department of Mechanical and Manufacturing Engineering offers majors in **Manufacturing Engineering (MFG)**, **Mechanical Engineering (MCH)** and **Engineering Management with a Manufacturing Engineering Technical Specialty (EGM)** leading to a Bachelor of Science in Engineering degree.

Manufacturing engineers design, develop, and control the manufacturing process so that quality products can be produced on time and at a competitive cost. Curriculum information for Manufacturing Engineering may be found in the appendix page A-1.

Mechanical engineers research, develop, analyze, design, manufacture, and test tools, engines, power systems, machines, and other mechanical devices and systems. Curriculum information for Mechanical Engineering may be found in the appendix page B-1.

The **Engineering Management with a Manufacturing Engineering Technical Specialty program** combines engineering, business, science, mathematics, and the liberal arts to help you address technological problems in their larger organizational and societal contexts. Curriculum for Engineering Management – Manufacturing Engineering may be found in the appendix page C-1.

A note about the curriculum – as a student, you are ultimately responsible for insuring that you meet all the requirements for graduation. The curriculum that was in place during the year that you started at Miami, i.e. if your first semester was fall 2007, you would be under CY08 or catalog year 2008, are the requirements you must fulfill. If the curriculum requirements change after that and before you graduate, you may, in consultation with your advisor, switch to the new requirements. Curriculum requirements for MME majors may be found in the appendix. They

are also available on the MME website at <http://eas.muohio.edu/mme>. Sample Curriculum sheets for double majors in Manufacturing Engineering and Mechanical Engineering and in Manufacturing Engineering and Engineering Management with a Manufacturing Engineering Technical Specialty as well as Sample Curriculum for a semester abroad at Miami's Luxembourg Campus or for doing a co-op are available in the department office.

3.2 Minors

The department offers minors in manufacturing engineering and mechanical engineering. Requirements for the manufacturing engineering minor may be found in the appendix page F-1 and requirements for the mechanical engineering minor may be found in the appendix page G-1. These minors are not available to students who are majoring in any of the majors offered within the Department of Mechanical and Manufacturing Engineering.

4.0 Department Mission, Objectives, and Outcomes

4.1 *The Mission of the Mechanical & Manufacturing Engineering Department*

The primary mission of the Department of Mechanical and Manufacturing Engineering is to provide quality graduates to meet societal and industrial needs. The Department provides graduates with in-depth education in mathematics, science, engineering science, and engineering design, as well as requiring a broad education in computing, business, and liberal arts. The Department is committed to excellence in undergraduate education: student learning, classroom effectiveness, assessment, engineering design and ethics integration, opportunities for leadership, and student advising.

Contemporary society and industry's problems are not only technical, but also social and economic. These needs are satisfied through development of superior students and faculty. The three programs of the department provide the students with additional and distinctive depth, depending on their chosen majors, in manufacturing engineering, mechanical engineering or engineering management with a manufacturing engineering specialty. Furthermore, common courses among the three programs, specifically in the design threads, provide the students with unique opportunity to experience interdisciplinary teamwork as well as understanding and learning about the other programs.

In the Department of Mechanical and Manufacturing Engineering, we consider faculty development as an essential part of educating students. In order to provide our students with the best education on state-of-the-art technologies and engineering methods, our faculty regularly attend professional conferences, workshops and seminars, conduct research and participate in continuing education courses involving educational techniques and new technologies.

The Department of Mechanical and Manufacturing Engineering is central to Miami University's mission to serve the community, state, and nation. Miami educates men and women for responsible, informed citizenship, as well as for meaningful employment. The Department provides a technology perspective for the liberal education community and supports the Miami Plan and the Honors Program by providing minors, honors and foundation courses, thematic sequences, and a capstone experience. Also, the Department has strong multidisciplinary

activities with the Departments of Computer Science and Systems Analysis, Electrical and Computer Engineering, and Paper and Chemical Engineering, as well as the Business School, the Psychology Department Ergonomic Center, and other programs within the University. These activities enhance the students' education and provide excellent opportunities for our faculty and students to engage with other scholars.

4.2 Program-Educational Outcomes

The ABET (for detailed information on ABET, see Section 8.0) Criterion 3 states that *Each program must formulate program outcomes that foster attainment of the program objectives articulated in satisfaction of Criterion 2 of these criteria. There must be processes to produce these outcomes and an assessment process, with documented results, that demonstrates that these program outcomes are being measured and indicates the degree to which the outcomes are achieved. There must be evidence that the results of this assessment process are applied to the further development of the program.*

Program outcomes are what we expect our students to know and be able to do by the time of graduation. The program-educational objectives (4.3) are broad statements that describe the career and professional accomplishments that our specific programs are preparing our graduates to achieve 2-5 years after graduation. The outcomes and the objectives were all derived from our mission statement.

Outcomes are divided into two groups – Broader-Desired Outcomes and Discipline-Oriented Outcomes.

4.21 Broader Desired Outcomes

Broader-Desired Outcomes are common to all SEAS majors. They are realized and emphasized by the strategic missions of the School of Engineering and Applied Science (SEAS) and Miami Plan for Liberal Education. Specifically, any graduate of SEAS should be able to:

- Define and solve problems
- Make ethical choices and act responsibly
- Critically evaluate information
- Work effectively in a team, exercise initiative, and function in a leadership role
- Recognize broad societal contexts and interests
- Serve clients and society with sensitivity and accountability
- Interact effectively with diverse cultures
- Adapt to change, recognize the value of life-long learning, and pursue further formal education
- Write, speak, and listen effectively
- Understand and apply mathematics and science
- Understand and apply the concepts of continuous quality improvement

4.22 Discipline-Oriented Outcomes

Discipline-Oriented Outcomes are specific to the chosen major. These outcomes are realized by the broad scope of the engineering program curriculum, which include courses in: mathematics, science, computing, business, engineering science, manufacturing processes and systems, engineering design, and student participation in professional practice. The first four outcomes are common to all three programs offered in the Mechanical and Manufacturing Engineering Department. Following those are additional outcomes specific to each of the three majors.

Graduates of any of the manufacturing engineering, mechanical engineering, and engineering management with a manufacturing engineering technical specialty programs should be able, upon graduation, to:

- Apply knowledge of mathematics, science, and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Design a system, component, or process to meet desired needs
- Identify, formulate, and solve engineering problems

Specifically, any graduate of the **manufacturing engineering** program should be able, upon graduation, to:

- Identify potential changes in behavior and properties of materials as they are altered and influenced by manufacturing processes
- Design products as well as the equipment, tooling, and environment necessary for their manufacture
- Create competitive advantage by manufacturing planning, strategy, and control
- Analyze, synthesize, and control manufacturing operations using statistical and calculus based methods, simulation and information technology
- Make technical inferences about a manufacturing process by measuring process variables

Specifically, any graduate of the **mechanical engineering** program should be able, upon graduation, to:

- Research concepts and application of modeling methods
- Simulate and test working conditions and their impact on the designed systems
- Solve open-ended engineering problems in thermal systems areas including the design and realization of such systems
- Solve open-ended engineering problems in mechanical systems areas including the design and realization of such systems

Specifically, any graduate of the **engineering management with a manufacturing engineering technical specialty** program should be able, upon graduation, to:

- Know and comprehend modern manufacturing processes and practice

- Know and comprehend the engineering relationship between the management tasks in production, research, and service organizations
- Know and comprehend the stochastic nature of management systems
- Integrate management systems into technological environments

4.3 Program Educational Objectives

The ABET Criterion 2 states that *Each engineering program for which an institution seeks accreditation or reaccreditation must have in place detailed published educational objectives that are consistent with the mission of the institution and these criteria.*

Program-Educational Objectives are the objectives that describe the career and professional accomplishments that our specific programs are preparing our graduates to achieve 2-5 years after graduation.

- Solve problems by applying the knowledge required for manufacturing engineers.
- Solve engineering problems by applying mathematics, basic sciences, and engineering science.
- Solve engineering problems by applying engineering design.
- Verbally communicate effectively information related to their work.
- Write effectively information related to their work.
- Serve as an effective team member.
- Serve as an effective team leader.
- Serve on multidisciplinary teams.
- Integrate and utilize fundamental knowledge in computing, business, and liberal arts in their job.
- Know and practice ethical responsibility as outlined by the engineering Code of Ethics.
- Engage in continuous learning and intellectual growth.

5.0 Academic Advising

The faculty in the Mechanical and Manufacturing Engineering take their roles as academic advisors seriously. During the 2006-2007 academic year, faculty spent the first semester creating a document on what constitutes effective advising and the roles of the students, faculty, department, division, and the Registrar's Office. The following is the document in its entirety which was approved by the department on December 19, 2006.

The roles of MME students, faculty advisors, the MME Department, SEAS, and the University Registrar to create an effective academic advising system

- 1) **MME Students** are responsible for
 - being familiar with the curricular requirements of their major,
 - learning how to read their DARS,
 - reading their DARS and checking it regularly,

being on time, prepared, and respectful,
reading and being responsible for messages sent by the MME department or their advisor,
reading and being responsible for announcements posted on MyMiami,
reading and keeping a copy of the MME Undergraduate Student Handbook,
attending first-year student advising events during their first year in the program,
preparing plans for possible course selections and alternatives,
being familiar with course registration procedures,
petitioning the MME department for transfer of credit for engineering courses or exceptions
to the curricular requirements for graduation,
contacting the registrar to apply for transfer of credit for non-engineering courses,
notifying their advisor of any academic and procedural difficulties.

- 2) **MME Faculty advisors** are responsible for
taking the initiative to introduce themselves to their advisees,
being available for advising meetings,
being prepared, on time, and respectful,
advising confidentially,
advising on preparing plans-of-study and specific course selections,
advising on the departmental petition process as necessary,
assisting with dealing with difficulties,
facilitating advice on selection of majors,
being knowledgeable about university requirements and rules,
accurately advising on curricular requirements,
maintaining orderly documentation of advising provided to individual students in a way that
is accessible to the department,
notifying individual students of any anomalies in course selection at beginning of the term,
referral to resources outside the domain of academic advising
- 3) **The MME Department** is responsible for
confidential maintenance of any records held,
assistance with dealing with difficulties,
rulings on transfer of credit for engineering courses or exceptions to the curricular
requirements for graduation,
providing clear, consistent, up-to-date, and accessible curricular requirements,
announcing curricular changes to faculty and students,
providing curricular planning materials,
providing lists of current advisees to faculty,
facilitating advice on selection of majors,
referral to resources outside the domain of academic advising,
responding in a timely manner, and
submitting changes of DARS major requirements to SEAS.
- 4) **SEAS** provides
timely requests for changes in DARS major requirements to the registrar, and
organization of first-year student advising events.

- 5) **Registrar** provides
 description of course registration procedures,
 support with transfer of credit,
 timely access to course registration and DARS information, and
 up-to-date programming of DARS major requirements.

5.1 Academic Advisors

You are assigned an academic advisor in the Mechanical and Manufacturing Engineering Department at the time you enroll in one of our majors. Your MME advisor is determined by your major and the year you entered Miami University. You may find out who your MME advisor is by calling the department office at 513-529-0710 or by e-mailing EGRInfo@muohio.edu. Your MME advisor is here to assist you in making decisions regarding your education and career choice. He/she is here to answer any questions you may have concerning registration, career path, problems you are having, etc. We recommend that you get to know your MME advisor and that you meet with him/her on a regular basis, at least once per semester prior to registering for the upcoming semester to assure that you are on track.

Current advisors are as follows:

CY=catalog year (i.e. year that you enrolled at Miami University – 2007-08 = CY08)

MFG=Manufacturing Engineering Major

MCH=Mechanical Engineering Major

EGM=Engineering Management Major

CY08	Ettouney – MFG/EGM
CY08	Singh - MCH
CY07	Ettouney - MFG
CY07	Koo - EGM
CY07	Dollár (A-J) – MCH
CY07	Hamilton (K-Z) – MCH
CY06	Ettouney – MFG
CY06	Moller – EGM
CY06	Shukla - MCH
CY05	Ettouney - MFG/EGM
CY05	BVK - MCH
CY04	Ettouney - MFG/EGM
CY04	Khan - MCH
CY03 +	Ettouney - EGM/MCH/MFG

My Advisor’s name _____

My Advisor’s e-mail address _____

My Advisor’s phone number _____

My Advisor’s office number _____

Dr. Ettouney is the advisor for all students with double majors when one of the majors is Manufacturing Engineering.

Chief Divisional Advisor for the School of Engineering and Applied Science is Dr. Brian Kirkmeyer. His office is located in 201 Bonham House, his phone number is 513-529-4036.

NOTE: Dr. Kirkmeyer's contact information will change with the SEAS move to Benton during the fall semester 2007.

5.2 *The Miami Plan for Liberal Education (taken from The Miami Bulletin 06-08)*

Liberal education complements specialized studies in your major and provides a broadened context for exploring personal and career choices. Every student, regardless of major, is required to participate in the Miami Plan for Liberal Education. Liberal education course work and co-curricular programming emphasize four basic goals:

- Thinking Critically
- Understanding Contexts
- Engaging with Other Learners
- Reflecting and Acting

For specific requirements of the Miami Plan, see The Miami Bulletin.

Requirements

- Group I requirement is satisfied by ENG 111 and 112.
- Group II requirement is satisfied by ECO 201 and three more courses in Fine Arts, Humanities and Social Science.
For EGM students, they need to take COM 135, ECO 201, and ECO 202, and one more course in Fine Arts.
- Group III requirements need two courses in US and World Cultures.
- Group IVB and lab course requirement is satisfied by PHY 181, 182, 183, and 184.
Another course in Biological Science (Group IVA) is required.

Thematic Sequence

With respect to the Thematic Sequence, you may select any one from the approved list, which is available in the Miami Bulletin; and an update is available on the following web site: www.muohio.edu/libereducation/tslist.html/. Mechanical Engineering and Engineering Management – Manufacturing Engineering Technical Specialty have embedded thematic sequences in their course requirements. Mechanical Engineering has MTH 2 Basic Mathematical Tools for Science (MTH 151, 222, STA 368). Engineering Management – Manufacturing Engineering Technical Specialty can use STA 1 Quality Issues in Contemporary Business and Industry (STA 368, MGT 302, MME 334, MGT 453). If you do use these embedded sequences, you must still go to the department and declare them. If you have questions, see your advisor.

Senior Capstone

The senior capstone requirement may be satisfied with MME 448-449. Other capstone courses are available on the following web site: www.muohio.edu/liberaleducation/capstone.html/.

5.3 *Degree Audit Report System (DARS)*

The DARS is a report of your completed course work and current registration matched with the degree requirements of your declared major. It identifies deficiencies and lists courses that will

satisfy specific requirements. DAR's are available online through BannerWeb. You should print a copy to review with your academic adviser prior to registering for subsequent semesters. You may also request a copy at any time at the Registrar's Service Center (102 Campus Avenue Building).

5.4 *Independent Study*

University regulation makes available independent study courses (177, 277, 377, and 477) to undergraduate students. A student may register for one to five hours of independent study each semester (no more than 10 per year). The purpose of independent study is to allow a student to conduct research beyond or in an area other than his or her required courses.

Independent study was not intended for nor should it be used to meet departmental course requirements.

5.5 *Petition Process*

Students wishing to modify the requirements for their major course of study, as well as acceptance of transfer credit for MME courses taken at other universities, are required to submit petitions for approval. Petition forms are available in the department office and must be properly completed, all necessary supporting documentation should be attached, and should be signed by the student's advisor. Petitions are submitted to the department's administrative assistant, Pam Messer. Mrs. Messer will log in the petition and will submit it to the Chair of the Petition Committee. The Petition Committee meets in a timely fashion and rules on each petition received. The student and faculty are notified of the decisions in writing. Students are encouraged to get approval of transfer courses prior to enrolling in the transfer course. Questions on petitions should be directed to the student's advisor, Petition Committee Chair, or the department chair.

5.6 *Proficiency Exams*

The following is stated in the Miami Bulletin 06-08.

These exams may be offered each semester. Each department administers its own test, and credit applies toward graduation. You may take a proficiency examination during any semester or term in which you are enrolled. See the Fees and Expenses chapter for test charges.

To be approved for a proficiency examination, you must satisfy the department that you have a reasonable chance of passing it. Normally, these examinations are for courses below the 300 level, but they may be given for advanced courses with approvals of the department chair and the dean of the division in which the course is offered.

You may obtain credit or advanced placement, or both, by examinations in areas in which you have had adequate preparation. Credit earned is traditional credit and is not counted in the admissible 32 semester hours of nontraditional credit. No grades are

awarded for proficiency examinations. See departments listed in the Miami Bulletin for specific information.

A student may take a proficiency exam in any MME course **except in those courses that have lab and design requirements.** The majority of students do not have this kind of proficiency in lab and design. However, in some cases, such as extensive industrial experience, they may have; in this case the student may petition to the department petition committee. For all proficiency exam requests, the following procedures must be met:

- The professor responsible for the course for which the student wants to take the proficiency exam must recommend approval and state why, before the petition can go to the department committee;
- The professor recommending the exam needs to prepare a statement (to be attached to the petition) that states the format to be used in the test. For example, the test will include five questions similar to those given to the students in previous offerings to the course. Also, he or she needs to specify the expected day and time (for example, 3-4 hours) to be used to complete the exam. This should be compatible with the exam times used in normal course offerings;
- The student needs to petition the department petition committee stating what previous professional and/or academic background that he/she has attained that would allow him/her to pass a proficiency (comprehensive) exam in this course; and
- For 300 level courses and above, the Dean's signature is required.

If the petition is approved, the instructor administering the exam will be responsible for preparing and conducting the exam. He or she will submit to the chair for signature (at least two weeks before the end of the semester) the graded exam and Miami's Application for Proficiency Exam.

5.7 *Pre-requisites and Co-requisites*

The Department of Mechanical & Manufacturing Engineering has adopted the following policy:

- All students taking an MME course will be required to declare, at the beginning of that course, that he or she has met (or failed to meet) the course's pre-requisites and/or co-requisites. This declaration will be documented in a checklist form. All such declarations are subject to verification against the student's DARS report. The Department of Mechanical and Manufacturing Engineering views wrongful declarations very seriously. Any wrongful declaration will be reviewed by the Department to determine whether it constitutes Academic Misconduct.
- Students who have not satisfied the course's pre-requisites and co-requisites may be dropped from the class. The department cannot offer assurance that dropping a student from class can be done early enough in a term to enable the student to enroll in another class.

- Students who think about dropping a “co-requisite” course (i.e. taking MME 223 and CHM 141 who decide to drop CHM) need to speak to both their advisor and the course instructor prior to doing so. Approval is needed from the department’s Petition Committee to remain in the class if you drop the required co-requisite.
- Even though it is possible to meet all pre-requisites and/or co-requisites for some MME 300 level courses without having successfully completed all 100 and 200 level courses (such as CHM or MTH) required by MFG, MCH, and EGM-MFG curricula; it is expected that each student will complete all of these courses prior to the beginning of the student’s Junior year.

5.8 Registration Information

Students are strongly encouraged to meet with their MME advisor prior to registering for the subsequent term.

Special Note On Math Requirements: If a student tests out of MTH 151, then based on content coverage he/she does not need any further mathematics courses to satisfy the degree requirements in the mechanical engineering major, advisors are urged to encourage such students to take one of the following mathematics courses:

MTH 252: Calculus III (3 cr) Prerequisite: MTH 249

MTH 432: Optimization (3 cr) Prerequisite: MTH 222

MTH 435: Mathematics modeling seminar (3 cr) Prerequisite: MTH 347 (Differential Equations) or permission of instructor

Manufacturing Engineering students will need to take an additional course in mathematics if they test out of MTH 151/153.

These suggestions/requirements are due to ABET requirements. For more specific information see your academic advisor.

5.9 Change of Schedule

You may change your schedule through the first full week of classes. You are encouraged to contact your MME advisor regarding adding/dropping classes, changing sections, force adding, and the number of registered hours on your schedule. In addition, you can discuss the Miami Plan, divisional, and major requirements.

5.10 Credit/No Credit Classes

Courses required for your major may **NOT** be taken for credit/no credit.

5.11 Final Grade Reports

Final grades are available online through BannerWeb. Students who have fewer than 30 hours attempted and whose cumulative g.p.a. is below a 1.7 will be placed on academic probation. A student who has earned 30 or more credit hours is placed on probation at the end of any semester

or summer session in which the cumulative g.p.a. is less than 2.0, regardless of the number of hours attempted in that semester or summer session. Students placed on probation receive a letter from the divisional office directing them to make an appointment with their academic advisor to discuss a “Plan of Action” for the remainder of the school year so that they can be more successful in the future.

5.12 MME Department Force Add Procedures

If you get closed out of an MME course and you want to force add the class, these are the steps that are to be followed:

- Student should contact the department, **not** the faculty member teaching the class. E-mail ‘s should be sent to MMEDept@muohio.edu
- Include in the e-mail
 - your name and banner number
 - the course you wish to force add including CRN and meeting times
 - your complete schedule – the courses you are registered for
 - the error message you received when trying to register, if any
- Students will receive a reply to their e-mail so that they know that it was received.
- Requests will be reviewed during the last week of classes each semester.
- The department chair will speak with appropriate faculty members as needed.
- Decisions will be made as to which students to add to classes.
- Students will be contacted during final exam week informing them of the decisions made. Students will be asked to respond confirming that they still want to be added to the class. No force adds will be processed without sending a confirming e-mail.
- The department will process the force add paperwork through the Registrar’s Office.
- Registrar’s Office will add course to your registration.

If you need to force add an MME class, the sooner you process your request, the better. It helps the Department in making decisions especially in the case where another section may be needed. NOTE: If there are multiple sections of a course and one section has a zero limit, that zero limit indicates that, depending on the number of requests received, the section may be opened. When you register you should keep that in mind. Also, it is the student’s responsibility to double check to make sure that all prerequisites/co-requisite requirements are met.

To add an ECE course, the contact person is Michele Lea, leamb@muohio.edu.

To add an EAS course, the contact person is Dr. Brian Kirkmeyer, seasadvising@muohio.edu

If you have any questions concerning this policy, contact the MME department.

e-mail – MMEDept@muohio.edu

phone – 513-529-0710

5.13 *Technical Electives*

Technical electives may either broaden the student's technical study to areas outside the major or provide an opportunity for in-depth technical study in an area of the student's interest. This area of the curriculum enhances the student's professional education.

A list of approved courses in MFG and MCH is shown on the respective curriculum sheets located in the appendices. **Double majors in any combination of MFG, MCH, and EGM may not use specific required courses to fulfill technical electives in the other major. For example, MME 437, which is required for the MFG major, may not be used as technical elective for double majors in MFG and MCH; CSA 372, required for EGM may not be used as a technical elective for double majors in EGM and either MFG or MCH.**

Procedures to Petition Alternative Technical Elective Courses – Alternative courses, to the approved list, may be considered if they satisfy the following requirements:

- At the level of 200, 300 or 400 level,
- Science-based and/or require calculus, science, computing, or engineering as co-requisites or pre-requisites,
- Offered by one of the following departments: Botany, Chemistry, Electrical and Computer Engineering, Microbiology, Paper and Chemical Engineering, Physics, Computer Science and Systems Analysis, and Zoology.

To consider an alternative course for technical electives, you need to take the following steps, at least, during the semester prior to taking the course:

1. Check that the course satisfies the above requirements
2. Consult with your advisor on your selection, and
3. Petition the department for approval of the course.

5.14 *Departmental Honors*

Departmental Honors is directed toward students who are interested in challenging themselves to go beyond the requirement for graduation in the three majors of Manufacturing Engineering, Mechanical Engineering, and Engineering Management with a Technical Specialty in Manufacturing Engineering. Challenging means that the student will design and conduct a significant independent project under the supervision of a faculty member during the student's junior and senior years of study at Miami. The goal is not only for the student to graduate with the distinction of "Departmental Honors," but also to show how he or she is becoming a true learner: one who learns how to learn on his or her own. Details on requirements may be found in Appendix H.

5.15 *The Fundamentals of Engineering (FE) Exam*

5.151 About the FE Exam

Engineering registration is regulated by the individual states and certifies that you meet certain standards through an examination process, which protects the public from individuals who are not qualified to offer engineering services. Each state maintains a board, usually consisting of registered engineers, to administer the registration exams, evaluate applicants, and rule on misconduct cases and applications of the law concerning registration.

The Fundamentals of Engineering (FE) exam is the first of two exams that engineers take to become registered professional engineers. The FE exam is an eight-hour, multiple choice test that covers mathematics, chemistry, physics, and engineering science. The four-hour morning session covers the basics in these subjects. The four-hour afternoon session covers junior/senior level material. Test-takers have the choice in the afternoon of taking exams in the area of chemical, mechanical, industrial, civil, electrical, or general engineering.

5.152 Why become registered?

- If you want to offer consulting services as an independent engineer, you need to be registered. State law requires it.
- If you want to own a company with the word ENGINEER or ENGINEERING in the name, a principal officer must be a registered engineer.
- If you want to work with federal, state, or local agencies in engineering of public projects, you are likely to need it.
- Some companies are now indicating a preference for professional engineers.
- Registration shows competency, and gives you instant credentials. The P.E. (Professional Engineer) designation signifies that you have met a rigorous set of guidelines and have been deemed qualified to practice engineering before the public. Being registered puts you on equal footing with registered engineers in other disciplines. A job change is made easier with better credentials, and ones that are recognized everywhere, as is the P.E. Also, being registered is a credential you own, independent of any employer.
- With the future as uncertain as it always is, registration helps give you some control. There is currently a movement to eliminate the industrial exemption. If that occurs, all practicing engineers will have to be registered.
- Last of all, probably the most important reason is for your own professional development. This is something you can do for yourself. It will help keep your options open for future opportunities that you cannot even imagine at this time. Some states call for Continuing Professional Development for Professional Engineers which encourages you to keep abreast of your profession. It will become part of your life long learning process, for which college prepares you.

Why consider taking the FE exam now? After all, you can wait until you have an explicit need before beginning the registration process. The primary reason is that you are closer now to the material on the exam, and hence can do better on the exam. You might as well take the exam before you forget the material. Once you pass the FE, you never have to take it again (in most states).

5.153 The registration process

The registration process follows three steps:

1. Take and pass the Fundamentals of Engineering exam. As graduates of accredited engineering programs such as our Manufacturing Engineering and Mechanical Engineering programs, currently enrolled students who are anticipating graduation within six months after the next scheduled examination are eligible to take this exam.
2. Accumulate experience working as an engineer.
3. Take and pass the eight-hour Principles and Practices of Engineering exam. In Ohio, as graduates of an accredited engineering program, you may take this exam after providing evidence to the state of four years of engineering experience (some co-op experience counts!).

5.154 Procedures to apply for the FE Exam

Since 1988 (when Manufacturing Engineering received its first ABET accreditation) the department has encouraged all students to apply for and take the exam. We are proud that the passing rate of the students who took the exam has been over 90%.

It is the intention of the School to focus our resources on those students who are really motivated early on and committed to taking the exam. We will continue encouraging all seniors to take the exam, but it is you, the student, that must take charge of your own motivation to study for and take the exam your last semester. It will be your responsibility to develop a self-study plan to prepare for the exam. The School will provide a review manual and the reference handbook, and conduct a mini-exam for those who have applied for the exam to gain some experience in taking the exam. Faculty members who usually teach in the specific areas of the exam will help you prepare for the exam as requested based on your self study plan; heavily requested subjects will typically be covered in group review sessions.

Procedures:

1. All eligible students are informed about the specifics of the exam the semester before it is to be taken. An informational meeting is held for interested students who would like to ask questions.
2. Eligible students contact the FE coordinator to indicate their intent to apply for and take the exam. The School will allow student to check out a copy of the exam review manual and reference handbook (to be returned to the FE coordinator the week after taking the exam).

3. The student also contacts Dr. Brian Kirkmeyer, Assistant Dean, who verifies the eligibility of the applying students and sends a letter of verification to the state board for each student.
4. The students who apply for the exam create a self-study plan needed to help them prepare for the exam's specific topics (statics, fluid mechanics, etc.). The School will identify faculty members willing to help review material for the exam. If there are enough students planning to take the exam the School may provide general review sessions. However, to guarantee that students will attend these sessions and study for the exam, the students need to share and approve their plans with their chair and/or FE coordinator prior to the organization of these sessions.
5. The students take the exam, typically in April or October, and receive their grades by June or December.

For further information, check out the web sites of the National Council of Examiners for Engineering and Surveying at www.ncees.org and the Ohio State Board of Registration for Professional Engineers and Surveyors at www.ohiopeps.org.

We encourage all of you to consider this important process, and keep it in the back of your mind as you progress through your studies. We wish you all the best.

5.16 Professional Experience in the Program

Interested in a Co-op or Internship???

If your answer is yes, we have provided some basic information below and would be happy to answer any questions you may have.

Co-Op and/or internship experiences are very beneficial to the student, employer, and the academic department. These programs are designed to give students practical work experience related to their field of study. The work experience makes a student's classroom instruction more meaningful, provides valuable student financial aid, and makes graduates more attractive to an employer because they are better prepared for an entry level position. Participating employers have the opportunity to work with highly motivated, energetic manufacturing engineering, mechanical engineering and engineering management students who they can help develop into more competent graduates. This early contact with students in a work setting allows employers the opportunity to train potential future employees on the uniqueness of the companies' operations.

Here are some of the most frequently asked questions.

What's the difference between a co-op and an internship?

Co-op students alternate between work and school every other academic term, including summers. For example, during the summer of your 2nd year in school you may have your first work assignment, in the fall you would return to school for a semester, in the spring you would return to work with the same employer, and again in the summer you would take classes.

An **internship** is a work experience for a semester or during the summer. It allows the company to hire a student to work on a special project or fill a short-term need. Some times a student can have an internship with the same employer for two or more summers; while other students work two or more summers but with different employers each time.

If I am interested in either a co-op or internship what do I have to do?

Register with the Office of Career Services. Their web site is: <http://www.units.muohio.edu/careers/> Follow their student link for all the information you need to register and participate in on campus interviewing.

Read announcements on the MME Undergrad and the SEAS Career Information Blackboard sites. The SEAS Career Information site has moved to a new format. Please click on the "SEAS Career Information" link on myMiami and then click on "Documents" to see the latest job postings. There are also direct links to the Office of Career Services webpage, as well as all of the SEAS webpages from the "External Links" link. Check out announcements on the SEAS and MME bulletin boards. You should also network and contact companies directly.

The Department is not in the business of placing you in a position be it co-op or internship. We are here to assist you by making information on opportunities available to you. Information that we receive on opportunities will be posted on Blackboard – MME Undergrads and/or SEAS Career Information. Students should also check the Career Services website on a regular basis.

How soon may I begin an internship or co-op?

Students may begin an internship or co-op as early as the summer following their freshman year depending on the company. Most students, however, wait until after their sophomore year. Students doing a co-op usually do their first rotation in the spring or summer of their sophomore year. Check with your MME advisor on what is best for you.

I've been offered an internship or co-op, now what?

Let the department's Administrative Assistant, Pam Messer (messerp@muohio.edu) know. We ask that you complete a form similar to the one found in Appendix H (copies are available on the department's career bulletin board and is available electronically from the MME Undergrad Blackboard site (documents). Mrs. Messer will e-mail you copies of the evaluation forms that both you and your supervisor should complete at the end of your work assignment. Upon completion of a co-op/internship period, the employer evaluates the student's performance using these or similar forms provided by the company; the completed forms should be returned to the department. The student, employer, and the department chair will review these evaluations in an effort to identify opportunities to enhance the co-op/internship program. Students may also register for a zero credit hour Professional Practice course (MME 320). The course will be listed on your DARs showing that you were involved in a professional practice – intern/co-op – experience. It is especially important for students on a work assignment during the first or second semester to register for this course as it holds your registration spot for the next term.

Sample curriculums for each major showing how a co-op will fit in the programs are available in the department office.

The Department defines Career Advising and the roles of the department and the student as:

Career Advising IS

- A mutual interaction between student, faculty/staff
- A wide array of informative programs to assist students in formulating their long-range career goals.

Career Advising IS NOT

- Intended to serve as an employment agency or a job placement service
- To replace the Office of Career Services (OCS)
- To replace student involvement in career selection or job seeking

The Mechanical & Manufacturing Engineering Department is cognizant of the need for students to develop their awareness of career opportunities available to them as majors in Manufacturing Engineering, Mechanical Engineering, and Engineering Management in conjunction with the development of technical skills and academic knowledge. Career awareness and academic knowledge is obtained through mutual involvement of student and faculty. The Department provides Career Advising in several formats for students who participate.

Department Responsibility

Provide an array of opportunities for gathering knowledge of career possibilities

- Professional campus organizations
- Professional guest speakers
- Company Tours
- Employer's company literature
- Faculty Academic Advisors

Provide method for Career Advising Information to reach the students

- SEAS Career Information (on myMiami)
- Postings on the MME Undergraduate Blackboard site
- Occasional E-mails and postings on department bulletin boards
- Letters and bulletins
- Department involvement with employers seeking full-time, intern and co-op students
- Direct communication with the Office of Career Services

Distribute student resumes

Companies work through the Office of Career Services and on occasion through the department. Most companies schedule their interview slots through the Office of Career Services. Some, however, do not buy access to the resumes on line. Instead they will have students send resumes directly to them. To be interviewed by a company coming through OCS, you must be registered with OCS to be eligible to interview even if the student has sent their resume directly to the company and the company elects to interview the student.

Company Information Sessions

Some companies do hold information sessions the night before schedule interview date and will usually accept additional resumes at this time and may even fill in empty slots at that time. Again, be sure you are registered with OCS. If the department is aware of the scheduled information session, it will disseminate the information to students by postings on department bulletin boards and the MME Undergrad Blackboard site.

Student Responsibility

- **Develop** career goals
- **Plan** how to obtain career goals
- **Attend** Office of Career Services Information Meetings and training sessions
- **Register** with the Office of Career Services
 - Check out **all** their Services for Students to see what is available
 - Know how to access their services
- **Participate** in programs provided by the Department and employers to disseminate information on career opportunities.

6.0 Miscellaneous Department Information and Opportunities

6.1 Using Department or Grant Funds to purchase items for project use

For department funds, approval by the department chair for the expenditure is required before an order is placed. For grant funds, approval of the supervising faculty is required. Also keep in mind that, depending on the type of grant, stipulations other than those listed below may be in force.

Miami University has very specific rules regarding procurement. Students making purchases for course projects or research projects need to be aware of these rules in order to abide by them. Please familiarize yourself with the University's process before attempting to make any purchase.

There are Student/Faculty Order Request Forms located in the department office (see the appropriate slot with the faculty mailboxes) that need to be completed for any item that needs to be purchased. This form should be turned in to Pam Messer and then the appropriate method of payment will be determined. (If arranging for purchase thru the Lab Technician, the form should be given to him to turn in to Pam with the order.)

When an item needs to be purchased, there are 3 major payment options:

1. MME Department credit card
2. Limited Purchase Order (LPO)
3. Requisition

The MME Department credit card can be checked out and used for purchases from places such as Walmart and Radio Shack when items are available in Oxford and are needed ASAP. You are responsible for using the credit card appropriately. Not sure if a planned charge is appropriate, check with Mrs. Messer about the intended purchase. Inappropriate use of the credit card will result in these privileges being revoked.

An LPO can be used for purchases under \$500 when the company you are ordering from accepts purchase orders. This needs to be determined before turning the Order Request Form in, so you should contact the company and ask what they will accept.

A Requisition must be used for purchases over \$500 when the company you are ordering from accepts purchase orders. This needs to be determined before turning in the Order Request form as well.

Disclaimer: Personal credit cards may be used as a last minute option for ordering supplies for student projects. This option should only be used in emergency situations, when prior planning was overlooked, as the process for reimbursement is long and cumbersome. Please note that Miami University is not required to pay taxes, so if you purchase items with a personal credit card the tax you paid will not be reimbursed. Also, reimbursement will only be made if all original receipts are included with the reimbursement request. When making a purchase using personal funds you need to be aware that reimbursement is not guaranteed, you should have the same approval of the Order Request form before you make the purchase to assure that you will be reimbursed for the purchase.

6.2 MME Laboratory Safety Procedures (adopted by the MME Dept 8/22/07)

The objectives of the MME laboratories are:

- To provide students a hands-on experience with materials, equipment and experimental procedures.
- To develop the students' ability to work safely in a laboratory environment without risk to themselves or others.

Basic safety procedures for all MME lab areas include:

- a. **No food, drink or smoking** in the laboratories
- b. **Avoid irresponsible behavior.** Plan ahead. When working in teams, do not assume that the other people know what you are planning on doing.
- c. **Learn the location and proper use of all laboratory emergency equipment** including the means for obtaining emergency medical assistance and help for other types of problems. Remember, the emergency number of campus is 9911.
- d. **Maintaining a clean and organized laboratory.** Every student is responsible for cleanup. When you finish, please put away everything you used.

In addition to basic safety, some laboratory activities require the use of machine tools, chemicals, electricity, hydraulics, compressed gases and related equipment and tools. During these activities, additional safety precautions should be followed, including:

- e. **Work only in the presence of another** who can help in the event of a problem.

- f. **Use the correct equipment for the job.** Find and use the proper manuals, specifications and other instructional aids. Tag, isolate and report defective devices.
- g. **Wear clothing that affords protection** and that will never cause a safety problem.
- h. **Remove jewelry** near electricity and machinery.
- i. **Locate the emergency stop** before starting a machine.
- g. **Use the personal protective equipment (PPE) provided and follow the posted PPE requirements in each lab.** Types of PPE in the MME labs may include:
 - i. Eye protection: safety glasses, goggles, etc.
 - ii. closed toe shoes
 - iii. gloves
 - iv. face shield
 - v. welding apron

The essence of safety is thinking ahead about the possible consequences of your actions. If you are unsure about instructions, procedures or an unfamiliar piece of apparatus, STOP AND OBTAIN ASSISTANCE. For the sake of everyone involved, do not ignore any potentially-unsafe condition or behavior.

MME LAB RULES

- 1) Normal hours for labs are Monday thru Friday 8-12 and 1-5. except during restricted hours.
- 2) Restricted hours due to class activity are listed on the calendars mounted in the lab.
- 3) If you plan on using equipment at times other than class, for your convenience you can reserve machines by signing them out on the calendar. Classes have the highest priority, followed by those who have reserved times for machines.
- 4) **After Class Use During Normal Hours**
 - a. If a student wants to use the lab outside of the normal class hours but between 8 and 5, he or she must obtain permission from the Lab Coordinator.
 - b. The student requiring this work should arrange with the Laboratory Coordinator to insure that the proper materials and tools are available.
 - c. **The student is responsible for insuring that proper safety rules are followed during this time** and that tools are put away and the lab is cleaned up after use.
 - d. Depending on the activity planned, the Laboratory Coordinator (Karl Reiff 9-0726) may ask the student to work with another student for safety reasons.
 - e. Students will not use the lathes, mills, or the welders without the direct supervision of the faculty member.
 - f. Students who have not completed MME 231 may not use any of the equipment in the Machine Shop without the direct supervision of the faculty member or a designated assistant.

5) After Hours Use

If you need to use the lab at a time other than the normal hours given above, all of the above rules still apply as well as the following procedure for authorization and a lab key. Only students that have filled out the Lab Use Form and have a key may use the shop after hours. After hours use of the labs by one person is not allowed, you must be accompanied by at least one other person.

- a) Discussing with the Lab Coordinator what equipment is needed and what you are going to be doing in the lab.
- b) Student(s) complete an After Hours Lab Use Authorization form and hand it to the MME Administrative Assistant (MAA) or designated representative. (See Appendix J for a sample form. Forms are available in the MME Department Office.)
 1. Any exceptions to the lab use rules will be noted on the After Hours Lab Use Authorization form and initialed by the student, faculty sponsor, and department chair.
- c) The After Hours Lab Use Authorization form is filed in the After Hours Lab Use Notebook by the MME department. On the day of the required lab use, the student asks for the key from the MAA or designated representative. The MAA or designated representative checks the After Hours Lab Use Notebook for authorization. If authorized, the Student will sign the MME After Hour Lab Use Key Sign Out Log.
- d) The student will return the key before 11am on the next business day. The MAA or designated representative will verify the return of the key in the log.

6.3 *Employment in the MME Department*

There are a variety of opportunities available within the department for student employment – office assistant (clerical assistance in the MME office), lab assistant (working with lab tech and/or faculty member during and outside of lab times), research assistant (work with faculty member on a research project), and grader (assisting faculty member by grading home work, etc.). If you are interested, please check with your advisor or the department’s administrative assistant for who to contact for the opportunity you are interested in.

7.0 **Other Opportunities and Programs of Interest**

Honors and Scholars Program – see page 66 of The Miami Bulletin Guidebook for New Students. www.muohio.edu/honors

Scholastic Enhancement Program – see page 66 of The Miami Bulletin Guidebook for New Students. www.muohio.edu/sep

Luxembourg (Dolibois European Center) – see page 67 of The Miami Bulletin Guidebook for New Students. Contact: Luxembourg Coordinator, 220 MacMillan, 513-529-5050. Students wishing to spend a semester in Luxembourg should work closely with their MME advisor to develop a program of study to insure their ability to be able to graduate on time. Sample curriculum are available in the MME office.

Study Abroad – see page 67 of The Miami Bulletin Guidebook for New Students. Contact: Study Abroad Advisor, 216 MacMillan, 513-529-5985. Students wishing to study abroad should work closely with their MME advisor to develop a program of study to insure their ability to be able to graduate on time.

Service Learning– see page 12 of The Miami Bulletin Guidebook for New Students.

Living Learning Communities – see page 5 and 66 of The Miami Bulletin Guidebook for New Students. www.muohio.edu/lc

Disability Resources – see page 8 and 9 of The Miami Bulletin Guidebook for New Students. <http://www.units.muohio.edu/saf/lrn/> - Rinella Learning Center.

Learning Disabilities Services – see page 8, 9 and 61 of The Miami Bulletin Guidebook for New Students. <http://www.units.muohio.edu/saf/lrn/> - Rinella Learning Center.

ROTC – see page 66 of The Miami Bulletin Guidebook for New Students. Also check out www.cas.muohio.edu/rotc.

Employment on Campus – see page 64 of The Miami Bulletin Guidebook for New Students. Also check out www.muohio.edu/studentemployment.

8.0 National Information

8.1 *ABET (Accreditation Board for Engineering and Technology) Accreditation (taken from the www.abet.org website)*

ABET's four accreditation commissions perform the accreditation function and determine accreditation actions. The Engineering Accreditation Commission is responsible for engineering programs, the Technology Accreditation Commission is responsible for engineering technology programs, the Computing Accreditation Commission is responsible for computer science programs, and the Applied Science Accreditation Commission for applied science programs. All commission members who chair the on-site visit teams are qualified evaluators and are thoroughly knowledgeable of accreditation procedures, policies, and criteria. Programs are identified as accredited by the Engineering Accreditation Commission of ABET (EAC/ABET), Technology Accreditation Commission of ABET (TAC/ABET), Computing Accreditation Commission (CAC/ABET), or Applied Science Commission of ABET (ASAC/ABET).

About Accreditation

In the United States, accreditation is used to assure quality in educational institutions and programs. Accreditation is a voluntary, non-governmental process of peer review. It requires an educational institution or program to meet certain, defined standards or criteria. Accreditation is sometimes confused with certification. In general, institutions and programs are accredited, and individuals are certified.

There are two types of accreditation -- institutional and specialized. Institutional accreditors, such as those referred to as “regional” accreditors, examine the college or university as a whole educational institution. Specialized accreditors evaluate specific educational programs.

Professional accreditors, such as those for medicine, law, architecture and engineering, fall into this category. The Accreditation Board for Engineering and Technology (ABET) is a professional accrediting organization that accredits programs, not institutions. More information on ABET and accreditation can be found on the ABET website at <http://www.abet.org>.

Accreditation serves to notify: Parents and prospective students that a program has met minimum standards; faculty, deans and administrators of a program's strengths and weaknesses and of ways to improve the program; employers that graduates are prepared to begin professional practice; taxpayers that their funds are spent well; and the public that graduates are aware of public health and safety considerations.

State licensing boards and certification programs may require graduation from an ABET-accredited program as the first step in the registration or certification process for professional practice. In some instances, ABET accreditation may permit students to receive federal funds in the form of scholarships, loans and grants.

On the ABET website, you can find answers to the following frequently asked questions

- Why are schools in the United States so different from each other?
- If I am a parent or prospective student, what should I consider when selecting a college or university?
- How do I know if an accrediting organization is legitimate?
- How do I find out which engineering programs are accredited?
- What is the process for accrediting an educational program?
- Does ABET accredit programs outside the United States?
- Can ABET assess the educational quality of an engineering or computer science degree earned outside the United States?
- Will I receive credit for educational courses or programs taken outside the United States?

The frequently asked questions web site is <http://www.abet.org/faq.html>

At this time, the following programs within the Mechanical and Manufacturing Engineering Department are accredited:

- Manufacturing Engineering.
- Mechanical Engineering

8.2 National Society of Professional Engineers (NSPE) Code of Ethics for Engineers (taken from the www.nspe.org website)

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

8.21 Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

9.0 Student Organizations

9.1 Engineering Honor Society

The Engineering Honor Society (EHS) is an organization governing itself like the national engineering honor society Tau Beta Pi. Miami University intends to apply for a Tau Beta Pi chapter by June 2006. Tau Beta Pi's purpose (and thus EHS's purpose) is "to mark in a fitting manner those who have conferred honor upon their alma mater by distinguished scholarship and exemplary character as undergraduates in the field of engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in the engineering colleges." Students in the majors of Mechanical Engineering, Manufacturing Engineering, Paper Science & Engineering, Electrical Engineering, Computer Engineering, and Chemical Engineering are eligible for election into EHS.

9.2 Engineering Students Abroad (www.orgs.muohio.edu/esa)

As stated in the Constitution, the objective of the Engineering Students Abroad organization is "... to help engineering students study abroad." This organization will encourage engineering students to travel abroad by being a "club" through which students can exchange ideas about their study abroad experiences and desires.

Engineering students who have already studied abroad or who might have information about studying abroad will be able to promote their experiences and knowledge to younger engineering students who are interested in studying abroad. This organization will also allow engineering students to form social relationships with others having similar interests.

9.3 Student Advisory Council

The Mechanical & Manufacturing Engineering Department Student Advisory Council represents the broader spectrum of the Manufacturing Engineering, Mechanical Engineering, and Engineering Management student body. The purpose of the council is to provide a mechanism for students to give constructive feedback on their educational experience. This partnership helps the department to communicate closely with the students, to learn first hand about the students'

needs and concerns, and to gain invaluable insight into their perception of the program. For more information see <http://www.eas.muohio.edu/mme/SAC.html>.

SAC is the group responsible for planning Engineering Week activities as well as other social activities for MME majors.

9.4 Society of Automotive Engineers (SAE)

The Society of Automotive Engineers (SAE) is a non-profit educational and scientific organization dedicated to advancing mobility technology to better serve humanity. With over 89,000 engineers and scientists as members, SAE develops technical information on all forms of self-propelled vehicles including automobiles, trucks and buses, off-highway equipment, aircraft, aerospace vehicles, marine, rail, and transit systems. The SAE student chapter brings together young engineers to enhance their exposure and education in automotive technology as well as to create an enjoyable and sociable organization. Student members actively participate in the highly popular SAE competitions, such as Formula SAE, Mini-Baja and Micro-Truck Baja, where students design, build and test their own automotive vehicles. Additional information on SAE is available on the website, <http://www.miamiredhawkracing.com>.

9.5 Society of Manufacturing Engineers (SME)

The Society of Manufacturing Engineers (SME) is the world's leading resource Where Manufacturing Comes Together - both people and information - to advance manufacturing knowledge. Innovation, productivity, flexibility, and continuous improvement are key ingredients to success in the constantly evolving world of manufacturing. At the core of everything SME does is the belief that continuous learning is the most effective way for individuals and organizations to accomplish these objectives and gain a sustainable competitive advantage.

Miami's student chapter provides engineering students the chance to explore manufacturing through industry speakers, plant tours, and social activities.

9.6 Society of Women Engineers (SWE)

The Society of Women Engineers (SWE), founded in 1950, empowers women to succeed and advance in their aspirations and be recognized for their life-changing contributions and achievements as engineers and leaders. The student section at Miami University seeks to encourage girls (K-12) to consider engineering or computing as a career choice as well as support the current engineering and computing students during their academic career. They hold regular monthly meetings as well as outreach events, social events, and professional development workshops.

9.7 National Society for Professional Engineers (NSPE)

NSPE is the premier national organization that promotes and defends the professional interests of all engineering professionals. It is the national society of engineering professionals from all

disciplines that promotes the ethical and competent practice of engineering, advocates licensure, and enhances the image and well-being of its members. The overall purpose of NSPE chapter programs is to stimulate continued interest in and understanding of the professional dimensions of engineering and to guide graduating seniors in the steps required to reach professional status through licensure as a professional engineer. NSPE is a nontechnical professional society, so a student chapter's programs are devoted mainly to nontechnical subjects. The generic nature of the meetings allow for participation by technical societies on campus as well. The NSPE Student Chapter is meant to complement student technical society activities, not compete with them.

9.8 American Society of Mechanical Engineers (ASME)

Founded in 1880 as the American Society of Mechanical Engineers, today's ASME is a 120,000-member professional organization focused on technical, educational and research issues of the engineering and technology community. The mission of ASME is to promote and enhance the technical competency and professional well-being of its members, through quality programs and activities in mechanical engineering, to better enable its practitioners to contribute to the well-being of humankind. The purpose of a Student Section is: to provide an opportunity for students to begin their professional careers by joining a professional engineering society; to inform students of recent developments in the field of mechanical engineering through publications, field trips and meetings; to promote fellowship and interaction with other student sections, as well as professional sectors of the Society.

10.0 Department's (External) Advisory Council (Representatives from industry who advise the department)

Members of the advisory council include:

Deepak Agarwal, Manager, Manufacturing Engineering, Square D/Schneider Electric
Johnny Alexander, Development Engineer, Ethicon Endo-Surgery, Inc. / Johnson & Johnson Company
Ferdinand Bach, Management Consultant
Larry Butkus, Senior Materials Engineer, Materials Integrity Branch, Air Force Research Laboratory
Ravinder Chona, Senior Scientist and Director, Structural Science Center, Air Force Research Laboratory
Blaine Hagins, Sales Manager, Sandvik Coromant Co
Jim Haidet, Owner, Keystone Development Services
Michael Hinegardner, Plant Manager, Parker Hannifin Corporation
Terry Kimble, VP Manufacturing, Connector Manufacturing Co
Mary Kinsella, Project Engineer, Materials & Manufacturing Directorate, Air Force Research Laboratory
Martin Lakes, Senior Vice President, MAG Advanced Technologies, North America, Giddings & Lewis Machine Tools, LLC.
Daniel Listermann, President & Owner, Listermann Mfg Co., Inc
Matthew Lorenz, Plant Manager, Eaton Electrical

David Mast, Senior Principal Engineer, Modine Manufacturing Company
William Millhaem, General Manager, Materials Services, GE Aviation Services
Steve Pasquale, Director of Manufacturing Strategy, Swagelok Company
Wayne Robbins, Manager, Digital X-Ray and Advanced Metrology, GE Aircraft Engines
David Rohe, President, ROA Group, LLC
Paul Shatlock, VP of the Metals Group, Jay Industries, Inc
Robert Simpson, President, Global Plastics Machinery, Milacron
Nicole Smith, Systems Engineer, NASA Glenn Research Center
Mark Tomasevich, Manager, Manufacturing Engineering & Facilities, Bowe Bell + Howell
Thomas Wahl, NVH Principal Systems Engineer, Air & Emissions Technologies,
ArvinMeritor OE, LLC